

(vii) Assist in arranging deputation of appropriate French experts to Film and Television Institute of India Pune,

(viii) Promote cooperation and collaboration between French and Indian cinema industry in the field of Cinema technology, production distribution and exhibition and

(ix) Maximise earnings in foreign exchange

Under this joint venture, *no repatriation is allowed by France Cinema Diffusion* or by its nominees out of India of the dividends if any paid on the shares held by it/them as the case may be

The terms offered by France Cinema Diffusion are quite favorable and will help modernisation of the film industry in the country besides earning the foreign exchange

(b) No film has so far been co pro

duced

(c) and (d) Question do not arise

### **Plan for the Utilisation of Waste Materials**

5242 SHRI RAM PUJAN PATEL Will the Minister of POWER AND NON-CONVENTIONAL ENERGY SOURCES be pleased to state

(a) whether the Department of Power and Non Conventional Energy Sources has conducted any research and development any plant for utilising the waste materials and

(b) if so the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF POWER AND NON CONVENTIONAL ENERGY SOURCES (SHRI KALP NATH RAI) (a) & (b) Yes Sir Research and Development has been conducted for utilisation of waste materials The details are given in Statements I and II

### **STATEMENT-I**

*Details in respect of pilot plants taken up as a follow up of research for utilisation of waste materials*

#### **1 Fruit & food Processing**

Two units of 25 cu m capacity each biogas generation have been commissioned at Mysore The gas is being used in canteen

#### **2 Willow Dust**

Willow dust based 25 cu m capacity biogas plants has been set up at Udaipur Cotton Mills Two similar plants of 25 cu m & 90 cu m capacity each are under construction in Punjab & M P

#### **3 Horse Dung**

Two units of 25 cu m capacity each biogas generation are recently

## 4. Kitchen

commissioned in Pune. Gas is being used by 19 families.

Two units of 10 cu.m. each and one unit of 43 cu.m. biogas generation project has been set up in Gujarat.

## 5. Distillery Effluent

a) A full-scale pilot plant for treatment of 1500 cu.m. distillery effluent per day is under installation in Uttar Pradesh after successful development of an indigenous technology at Lab. & Pilot scale levels.

b) A 10 cu.m. capacity pilot plant has been designed & commissioned at a distillery in Maharashtra for treatment of distillery spentwash with fixed film reactor (FFR) Technology.

## 6. Hospital Waste Water

Two units of 25 cu.m. each have been taken up at Nagpur for resource recovery from hospital waste water with FFR technology.

## 7. Tannery Waste

A pilot plant of 65 cu.m. capacity has been designed & developed for treatment of tannery waste waters with FFR technology and under installation in Tamil Nadu.

## 8. Water Hyacinth

i) Two plants of 5 cu.m. each have been installed at Vallabh Vidyanagar in Gujarat.

ii) Experimental plant for waste water treatment-cum-biogas generation by recycling of water hyacinth is in operation at Sangli in Maharashtra. Biogas is used for cooking.

iii) Few more pilot plants having capacities ranging between 2 cu.m. to 10 cu.m. developed using other technologies have also been installed at various institutions.

---

**9 Sugarcane Presumed**

A 60 cu m capacity community biogas plant in Tamil Nadu been commissioned and successfully operated on sugarcane presumed. 29 families are using biogas for cooking purposes. Some more similar projects of capacities ranging from 100 to 340 cu m have been taken up in different parts of country.

**10 Banana**

A 5 cu m capacity biogas plant based on banana stem has been installed at a farm in Gujarat.

**11 Eucalyptus Leaves**

A 5 cu m capacity biogas plant based on Eucalyptus leaves has been set up at a farm in Gujarat.

**12 Composite Agri culture Waste**

A plant design has been developed for generating biogas from composite agriculture waste of cowdung, rice straw & dried banana in definite proportion. A 10 cu m pilot plant is set up at an Institute in Gujarat.

**STATEMENT-II**

As a result of extensive Research and development in the biomass gasification technology over last 4-5 years, six technologies have already been developed for gasification of biomass wastes. These units are being manufactured by 6 different entrepreneurs in the country. The systems based on these technologies are capable of converting biomass wastes such as wood waste, wood chips, twigs, cotton stalk, tur stalk, maize cobs, rice husk, etc. to energy and power through gasification. These devices run dual fuel engine or Stirling engine to produce motive power to operate pumpset for irrigation or drawing water or to produce electricity through alternator. The biomass pumpset and generators are available in different ratings from 5 HP to 10 HP for me-

chanical applications like water pumping and from 3 KW to 100 KW for generation of electricity. These systems substitute/replace diesel fuel in conventional dual fuel engines for respective applications by over 65%. For promotion of these technologies, Government have taken up a demonstration programme cost sharing basis upto an extent of 80% for 50-80% for electricity generation system depending upon the category of users.

So far, 850 nos. of gasifiers and sterling engine systems, in different ratings and modes, equivalent to about 6.5 MW have already been installed all over the country. Most of these systems are installed in rural areas and are being utilised either for water pumping or for irrigation purpose or electricity generation.